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Watanabe et al.

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(54) **USE OF A G PROTEIN-COUPLED RECEPTOR AND ITS COGNIZANT LIGAND IN THE IDENTIFICATION OF COMPOUNDS THAT AFFECT PROLACTIN SECRETION**

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(58) **Field of Classification Search** None
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,262,246 B1 * 7/2001 Gerald et al. 536/23.5

FOREIGN PATENT DOCUMENTS

JP	09-238686	9/1997
WO	WO-97-24436	7/1997

OTHER PUBLICATIONS

Daniela Marazziti, et al.; "*Molecular Cloning and Chromosomal Localization of the Mouse Gpr37 Gene Encoding an Orphan G-Protein-Coupled Peptide Receptor Expressed in brain and Testis*"; Genomics 53, pp. 315-324; (1998); Article No. GE985433.
Dorland's Illustrated Medical Dictionary, 28th ed. (1994), p. 1361.
The Merck Index, 13th ed. (2001), p. 1392.
The Merck Manual, 17th ed. (1999), p. 68.
Concise Oxford English Dictionary (1990), p. 954.

* cited by examiner

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(57) **ABSTRACT**

The polypeptides in the present invention possess the effects of promoting and inhibiting the secretion of prolactin, and are thus useful as drugs for the prevention and treatment of various diseases, in terms of prolactin secretion stimulants, which are associated with the secretion of prolactin, such as hypovarianism, spermatid underdevelopment, menopausal symptoms, hypothyroidism, etc. The polypeptides are useful as drugs for the prevention and treatment of various diseases, in terms of prolactin secretion inhibitors, which are associated with the secretion of prolactin, such as pituitary tumor, dienecephalon tumor, menstrual disorder, autoimmune diseases, prolactinoma, sterility, impotence, amenorrhea, lactorrhea, acromegaly, Chiari-Frommel syndrome, Argonz-del Castillo syndrome, Forbes-Albright syndrome, lymphoma, Sheehan's syndrome, spermatogenesis disorder, etc.

1 Claim, 15 Drawing Sheets